FIG. 1

Prior Art

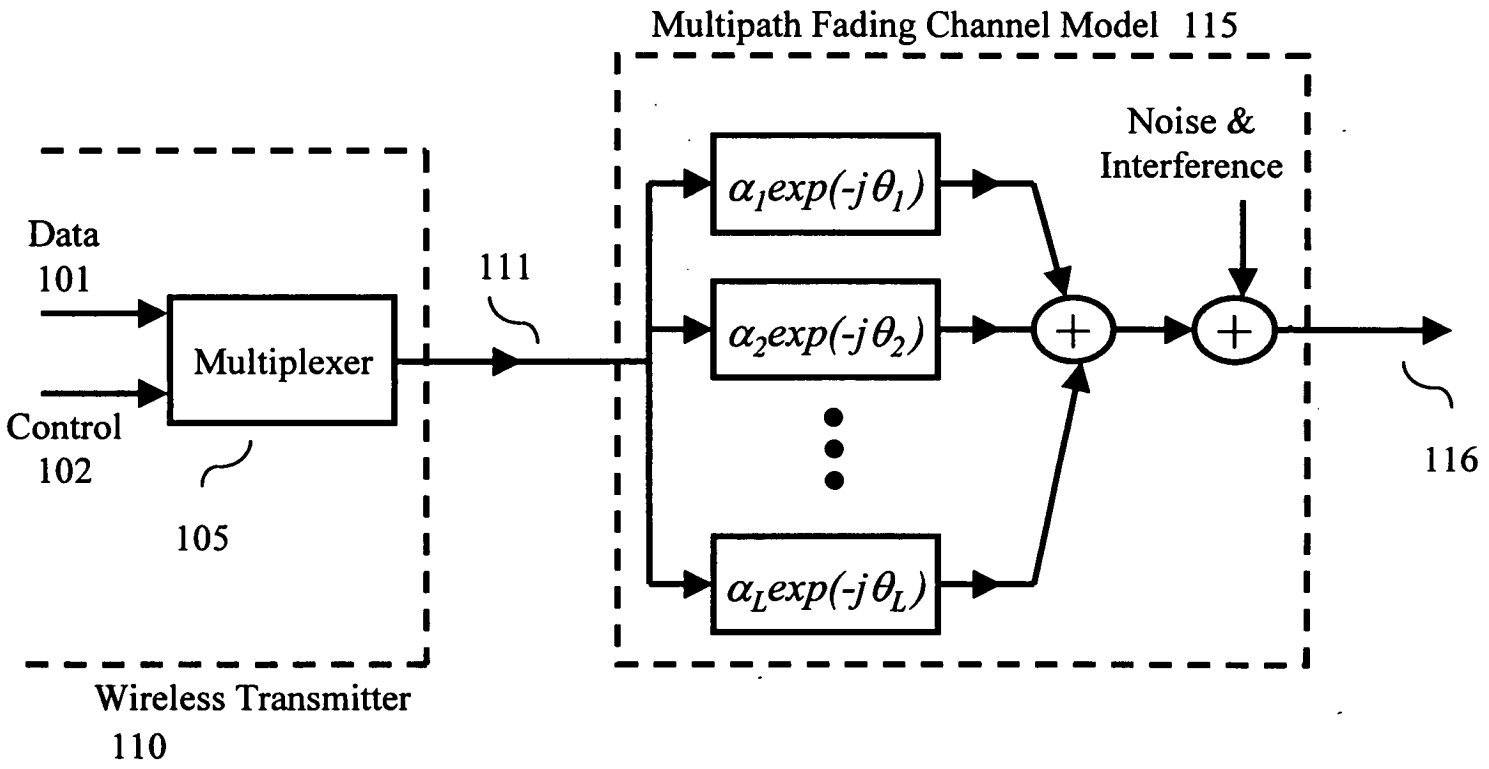


FIG. 2

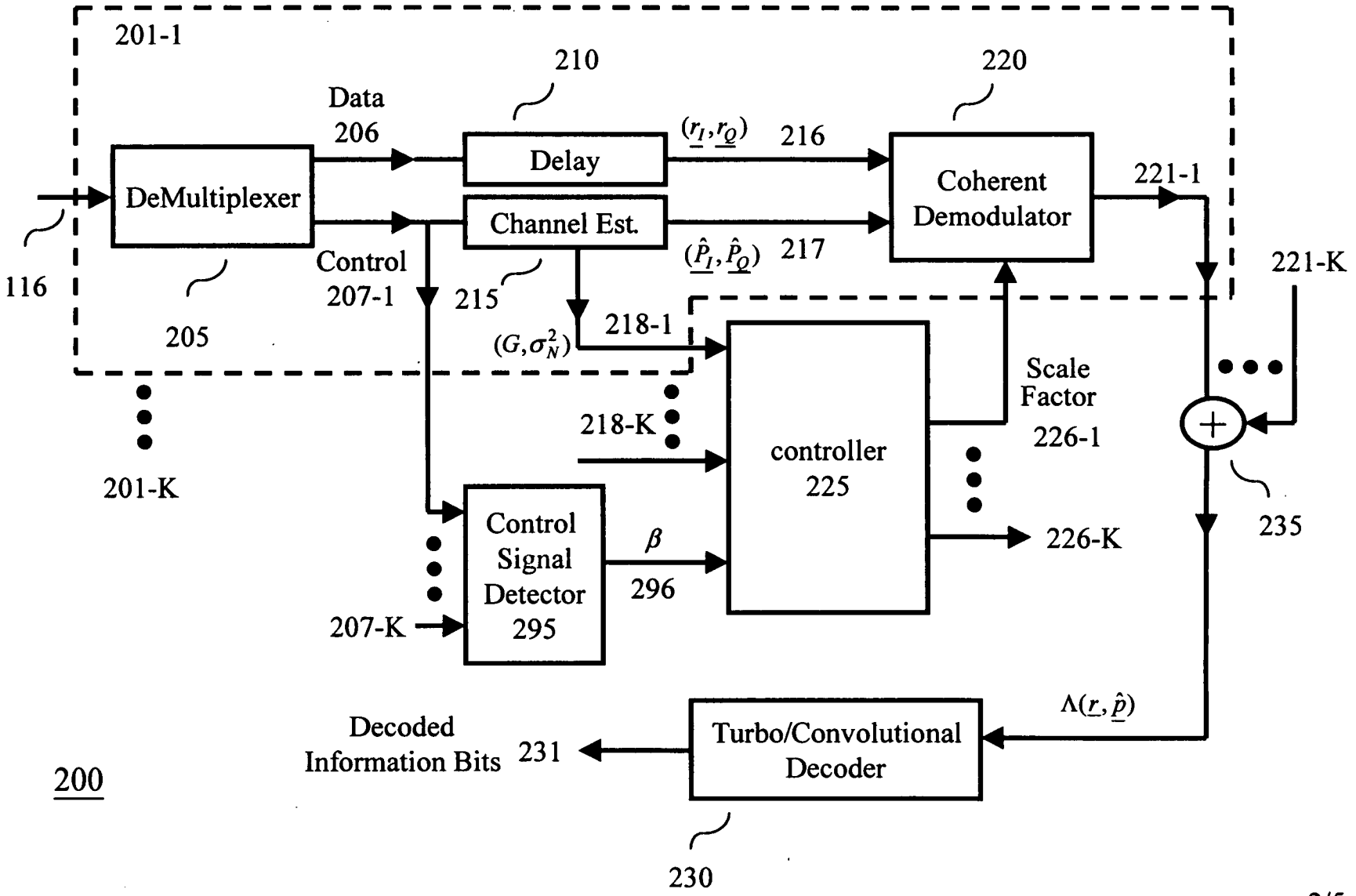

201-1
210
220
Data
206
(r_I, r_Q)
216
Delay
Coherent
Demodulator
221-1
DeMultiplexer
Channel Est.
$(\hat{P}_I, \hat{P}_Q)$
217
116
Control
207-1
215
221-K
205
(G, σ_N^2)
218-1
Scale
Factor
226-1
218-K
controller
225
201-K
Control
Signal
Detector
295
β
296
226-K
235
207-K
$\Lambda(\underline{r}, \underline{\hat{p}})$
Decoded
Information Bits
231
Turbo/Convolutional
Decoder
200
230

FIG. 3

$\sqrt{\beta}$	Scale Factor
0.066667	2.242991
0.133333	2.364532
0.2	1.983471
0.266667	1.635434
0.333333	1.371429
0.4	1.173594
0.466667	1.02252
0.533333	0.904381
0.6	0.809899
0.666667	0.732824
0.733333	0.668862
0.8	0.61499
0.866667	0.569032
0.933333	0.529384
1	0.494845

Scale Factor Look-up Table

FIG. 4

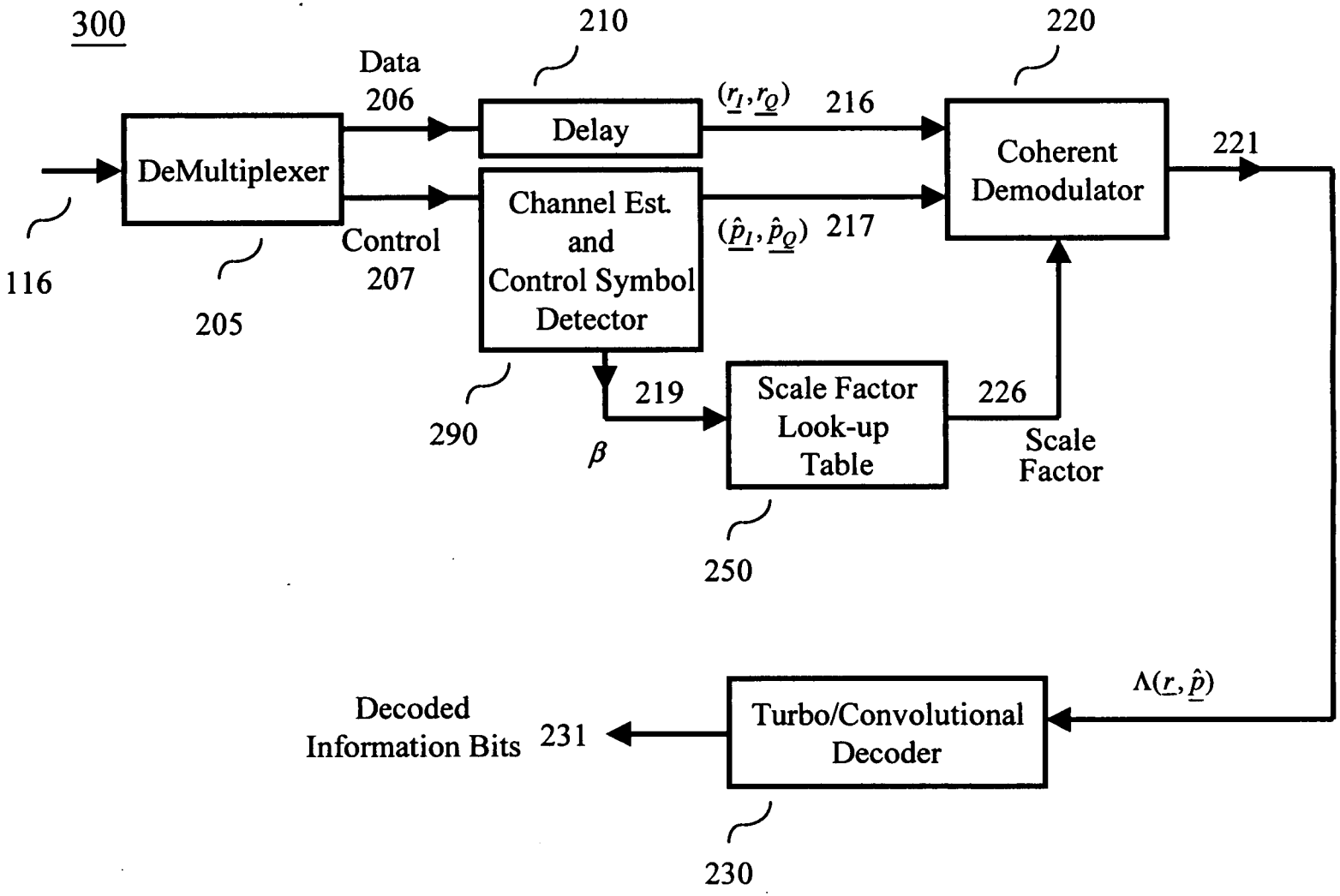
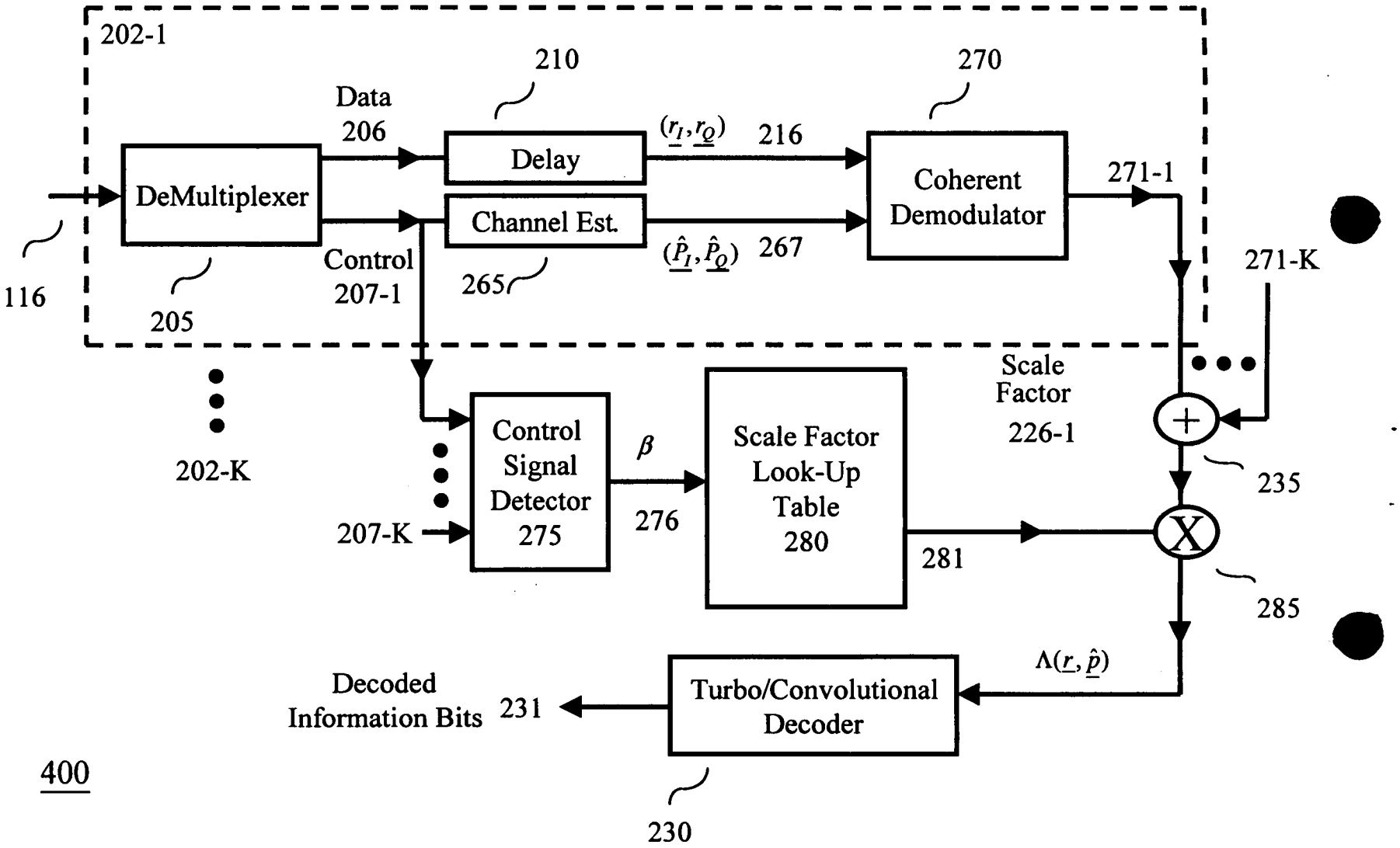

300
210
220
Data
206
(r_I, r_Q)
216
Delay
Coherent
Demodulator
221
DeMultiplexer
Channel Est.
and
Control Symbol
Detector
$(\hat{p}_I, \hat{p}_Q)$
217
116
205
Control
207
290
219
β
Scale Factor
Look-up
Table
226
Scale
Factor
250
$\Lambda(\underline{r}, \underline{\hat{p}})$
Decoded
Information Bits
231
Turbo/Convolutional
Decoder
230

FIG. 5


202-1
210
270
Data
206
(r_I, r_Q)
216
Delay
DeMultiplexer
Channel Est.
Coherent Demodulator
271-1
271-K
116
205
Control
207-1
265
$(\hat{P}_I, \hat{P}_Q)$
267
Scale Factor
226-1
202-K
Control Signal Detector 275
β
276
Scale Factor Look-Up Table 280
281
235
207-K
285
$\Lambda(r, \hat{p})$
Decoded Information Bits
231
Turbo/Convolutional Decoder
400
230